

Original Article

Current Management of Urethral Stricture Disease in Zaria

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ABSTRACT

Background: Urethral stricture is prevalent in all regions of the world with varying aetiological factors. Different surgical modalities have been employed in its management over the years. This study aimed to review etiologic factors, types, treatment modalities and outcomes of urethral stricture disease.

Methodology: The medical records of patients who were managed for urethral stricture disease between 2006 and 2016 were reviewed. Data were extracted from patients' case files and operation records, which included the, demographics, aetiology, location, length, type of surgery for the urethral stricture and outcome data where available. The data obtained were analysed using statistical program for social sciences (SPSS) version 21.0

Results: We retrieved the records of a total of 288 patients managed for urethral stricture within the study period. However, we analysed only 140 patients who had complete records. The mean age was 43.9 years. Most strictures were located in the bulbar urethral region (52.4%). Post-inflammatory strictures were the commonest, comprising of 36.6% of all cases. Anastomotic urethroplasty was found to be the most common form of surgical repair (44.0%). Buccal mucosal graft (BMG) urethroplasty was predominantly used for long segment strictures involving the bulbar urethra while penile skin flap urethroplasty was used for most strictures in the penile urethra or peno-bulbar urethra. Anastomotic urethroplasty had the best outcome.

Conclusion: The findings of this study showed that post inflammatory urethral strictures remain the commonest types of stricture in our environment, consequently, it is imperative to develop public health strategies to reduce the incidence of sexually transmitted infections, which underlies the occurrence of these strictures. In terms of treatment, anastomotic urethroplasty was the commonest procedure, while BMG and penile skin flap urethroplasty were mostly employed for long segment strictures.

Keywords: Urethral stricture, Current, Aetiology, Treatment



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INTRODUCTION

Urethral stricture is a relatively common disease amongst Men. It is the progressive narrowing of the urethra due to spongiofibrosis and often times results in bladder outlet obstruction manifesting with lower urinary tract symptoms. These patients may also develop acute or chronic urinary retention or other complications such as peri-urethral abscess, Urethro-cutaneous fistula, watering can perineum, Fournier's gangrene and obstructive nephropathy.¹

Its prevalence is put at about 0.6% of at-risk population in the United States.² Prevalence in Nigeria is largely unknown. Whereas, iatrogenic and idiopathic causes are reported as the leading cause of urethral stricture disease in the Western world,² the high prevalence of urethritis (sexually transmitted infections) in most parts of Sub-Saharan Africa^{3,4} mirrors the incidence of post-inflammatory urethral strictures, which is the commonest in this environment. However, a change in trend is being observed recently in some studies in urbanised centres in sub Saharan Africa, where trauma has become the leading cause of urethral stricture in select areas.^{5,6}

The mode of management of urethral stricture disease is dependent on several factors, which include the stricture/patient characteristics, the preference and experience of the surgeon. Anastomotic urethroplasty even in cases of re-do urethroplasty remains the method with the highest success rate in most reported cases.^{7,8} Other methods have variable success rates depending on the centre and experience of the urologist. This study was aimed at reviewing the etiologic factors, types, treatment modalities and recurrence rate of urethral stricture disease in Zaria between 2007 and 2017

METHODOLOGY

This was a retrospective, single centre study which covered the period 2006-2016. The medical records of patients who were managed for urethral stricture disease were reviewed. Required data were extracted from patients' case files and operation records. All patients who presented with urethral stricture disease and pelvic fracture urethral distraction defects (PFUDD) confirmed by urethrography during the period of the study were included in the study. Cure, post-urethroplasty was determined by a patent urethra as seen on peri-catheter retrograde urethrogram done at 3 weeks

post-op and the ability of the patient to void per urethra with absence of lower urinary tract symptoms upon removal of urethral catheter after surgery. Recurrence on the other hand was determined by development of any one or all of acute urinary retention and lower urinary tract symptoms within one year of surgery.

Patients who had incomplete records and those with co-existing benign prostatic hyperplasia or evidence of other possible cause of lower urinary tract symptoms were excluded from the study. We retrieved the records on demographic and clinical characteristics of the patients, aetiology of stricture, investigations, treatment method and follow up records. Data obtained were analysed using the statistical package for social sciences (SPSS) version 21.0 using simple descriptive statistical analysis.

RESULTS

We retrieved the records of a total of 288 patients managed for urethral stricture disease within the study period. However we analysed only 140 patients who had complete records. The mean age of the patients was 43.9 years with a range of 8-85years. Interestingly equal number of short and long segment urethral stricture presented during the study period (50% each). The median age for post traumatic strictures was 33years while that for post inflammatory strictures was 48years.

Analysis of the location of the strictures showed that more than half (52.4%) of the strictures were located in the bulbar urethra while peno-bulbar location came a distant second, accounting for only 16.8%, others are shown in table 1. The post-inflammatory strictures were the commonest, accounting for about 36.6% while traumatic strictures were the next most prevalent as shown in figure 2. Anastomotic urethroplasty was the commonest treatment modality in employed by the surgeons, which accounted for 44%. While BMG urethroplasty was used just about half as frequent (26.3%) when compared to anastomotic method, the frequency of other methods are displayed in figure 3. There were no female patients with strictures. A recurrence rate of 20.7% was recorded during the average follow up period of 1 year.

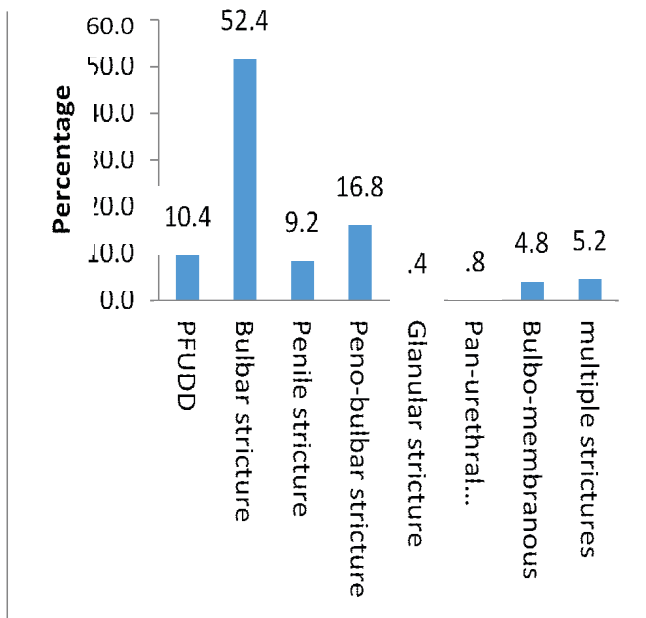


Fig 1: A graph showing the location of strictures.

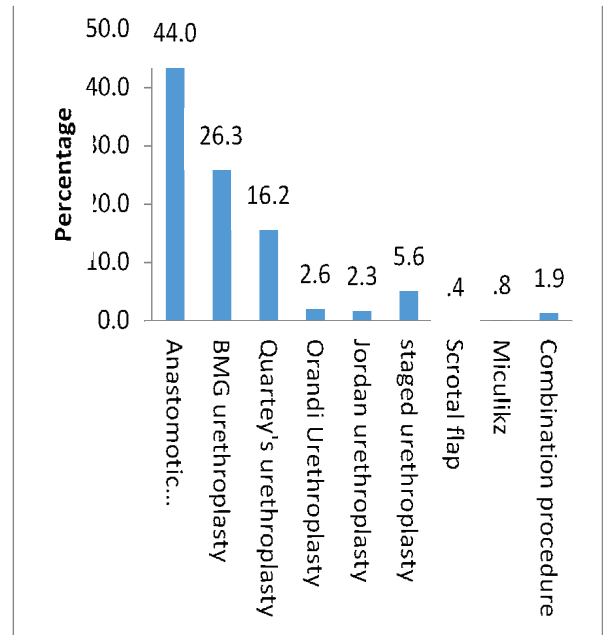


Fig 3: A graph showing the type of urethroplasty.

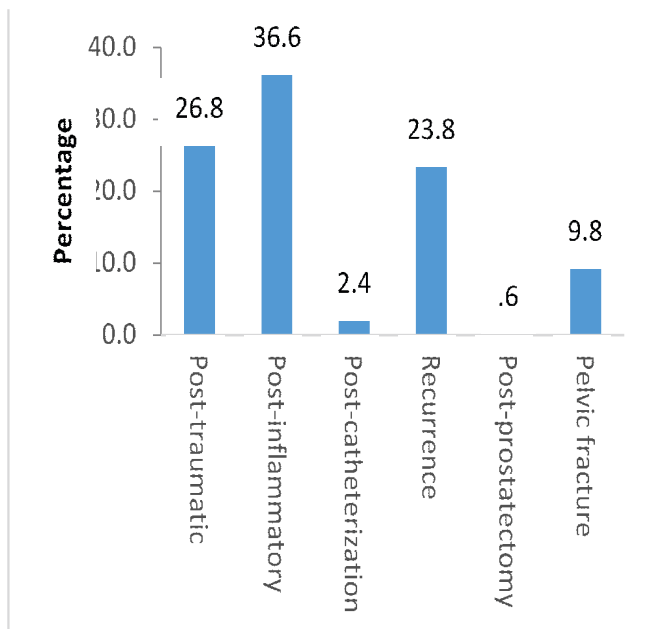


Fig 2: A graph showing the aetiology of stricture.

DISCUSSION

The mean age of our patients who had urethroplasty was found to be 43.9 years. This is similar to the mean ages of patients in US/Italy (42.7 years), India (38.2 years) and Kenya (42.7 years)^{2,4} but different from the mean ages of patients in Southern Nigeria (53.11 years) as found in a study by Irekpita.³ The recurrence rate after urethroplasty recorded in this study of 20.7% was in keeping with the recurrence rate reported in other similar studies conducted in Sub Saharan Africa. The study by Ofoha *et al*⁶ conducted in Jos, north central, Nigeria reported a recurrence rate of 25%.

Most anterior urethral strictures tends to occur at the region of the bulbar urethra, the occurrence of 52.4% of strictures in this study in the bulbar urethra was in keeping with the findings in the study by Hampson L. A *et al*.¹ of 46.9%. This is understandable, bearing in mind that the commonest cause of strictures in our study is urethritis, which happens to be more prevalent in the region of the bulbar urethra because of the preponderance of peri-urethral glands (Littre's glands).

Although traumatic and idiopathic causes have been reported

severally as the leading cause of urethral stricture in the west and east,^{2,10,12} our study, like many others in sub Saharan Africa,^{3,4} has shown post inflammatory strictures as the leading type of urethral stricture in our environment. Of note however, is a changing trend in the aetiology of urethral stricture being observed in some urban centres in Nigeria such as Lagos and Jos.^{5,6}

None of our patients was treated with dilatation as primary treatment or direct visual internal urethrotomy (DVIU) owing to their inadequacy for strictures longer than 1cm and an already established high recurrence rate.^{10,11} Bulbar strictures of less than 2cm were best treated with anastomotic urethroplasty¹¹ which gives a high success rate reported in some studies like that of Eltahawy *et al.*¹² where they recorded a success rate of 98.8%. Anastomotic urethroplasty was done in 44% of cases within the study period in the index study with various graft and flap based urethroplasty used in the remaining 56% of cases. Analysing all the different forms of urethroplasty together may have accounted for the lower success rate of 79.3% recorded as compared to the study by Eltahawy *et al.*¹²

CONCLUSION

The findings of this study showed that post inflammatory urethral strictures remain the commonest types of stricture in our environment, consequently, it is imperative to develop public health strategies to reduce the incidence of sexually transmitted infections, which underlies the occurrence of these strictures. In terms of treatment, anastomotic urethroplasty was the commonest procedure, while BMG and penile skin flap urethroplasty were mostly employed for long segment strictures.

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Previous presentation

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Conflict of interest

The authors declare that they have no conflict of interest.

Authors' contributions: The manuscript has been read and approved by all the authors and the requirement for authorship has been met.

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